Astronomy Letters 2015 vol.41 N7, pages 307-316

High-accuracy redshift measurements for galaxy clusters at z < 0.45 based on SDSS-III photometry

Meshcheryakov A., Glazkova V., Gerasimov S., Burenin R., Khorunzhev G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015, Pleiades Publishing, Inc. A new method for measuring the redshifts of galaxy clusters based on photometric SDSSIII data is presented. Highly accurate photo-z measurements for red-sequence galaxies using machine learning techniques on a training sample of luminous red BOSS LOWZ galaxies allow the redshifts of clusters at z < 0.45 to be determinedwith an accuracy σnorm = 0.011. The accuracy of the proposed method has been estimated on galaxy clusters from the 400d catalog.

http://dx.doi.org/10.1134/S1063773715070038

Keywords

galaxy clusters, machine learning, observational cosmology, photometric redshifts, SDSS